CLAIMS

1. A bending machine for bending a workpiece by cooperation of an upper bending mold and a lower bending mold which are movable relatively in the vertical direction, comprising:

an upper table which has an upper mold attachment part for attaching the upper bending mold on the bottom side thereof and extends in the horizontal direction;

a lower table which is formed so as to be opposed to the upper table in the vertical direction, has a lower mold attachment part for attaching the lower bending mold on the top side thereof and extends in the horizontal direction;

an input part for inputting product information;

a bending order determination part for determining a bending order of the workpiece;

a mold determination part for determining the mold necessary for bending the workpiece;

a layout determination part for determining layout of the mold;

a positioning information calculation part for calculating a position of the workpiece with respect to the mold determined by the layout determination part as work position information; and

a navigating member for navigating position of the workpiece to the operator by movement in the horizontal direction on the basis of the work position information calculated by the positioning information calculation part.

2. A bending machine according to claim 1, wherein

the navigating member is formed on a front face of the lower table so as to be movable in the horizontal direction, has a striking face to which an end

face of the workpiece can strike from the left or right direction; and

the navigating member can be freely ascended in the direction of an upper face of a die after positioning in the horizontal direction.

3. A bending machine according to claim 2, wherein

a locating member is formed at a front end of the navigating member and has a mounting table for maintaining height of the workpiece appropriately when the workpiece is struck against an end face of the locating member.

4. A bending machine according to claim 2, wherein

a locating member is rotatably formed at the front end of the navigating member and by rotating the locating member and striking the workpiece against the end face of the locating member, position of the mold can be guided to the operator.

5. A bending machine according to claim 1, wherein

the navigating member is a back gauge provided in the rear side of the lower table so as to be movable in the horizontal direction and the longitudinal direction.

6. A bending machine according to claim 1, wherein

the navigating member is a light-emitting device for guiding position of the workpiece to the operator by emitting light at an appropriate position.

7. A bending machine according to claim 1, wherein

the navigating member is a belt with a navigating guide part and the navigating guide part stops at an appropriate position, thereby to guide position

of the workpiece to the operator.

8. A bending machine for bending a workpiece by cooperation of an upper bending mold and a lower bending mold, comprising:

an upper table which has an upper mold attachment part for attaching the upper bending mold on the bottom side thereof and extends in the horizontal direction;

a lower table which is formed so as to be opposed to the upper table in the vertical direction, has a lower mold attachment part for attaching the lower bending mold on the top side thereof, extends in the horizontal direction and can be move relatively in the vertical direction with respect to the upper table;

a navigating member which is provided on a front face of at least either of the upper table or the lower table so as to be movable in the horizontal direction and guides the operator;

a traveling actuator for transferring the navigating member in the horizontal direction;

a mold layout determination part for determining mold layout information representing a layout mode of the lower bending mold and the upper bending mold in the horizontal direction on the basis of product information representing shape of the product and the like; and

a traveling actuator control means for controlling the traveling actuator so as to locate the navigating member at a position corresponding to a mold attachment reference position in the horizontal direction on the basis of the mold layout information.

9. A bending machine for bending a workpiece by cooperation of an upper bending mold and a lower bending mold, comprising:

an upper table which has an upper mold attachment part for attaching the upper bending mold on the bottom side thereof and extends in the horizontal direction;

a lower table which is formed so as to be opposed to the upper table in the vertical direction, has a lower mold attachment part for attaching the lower bending mold on the top side thereof, extends in the horizontal direction and can be move relatively in the vertical direction with respect to the upper table;

a navigating member which is provided on a front face of at least either of the upper table or the lower table so as to be movable in the horizontal direction and guides the operator;

a traveling actuator for transferring the navigating member in the horizontal direction;

a mold layout determination part for determining mold layout information representing a layout mode of the lower bending mold and the upper bending mold in the horizontal direction on the basis of product information representing shape of the product and the like;

a positioning information calculation means for calculating work positioning information representing a positioning mode of the workpiece with respect to the lower bending mold on the basis of the product information and the mold layout information; and

a traveling actuator control means for controlling the traveling actuator so as to locate the navigating member at a position corresponding to a work positioning reference position in the horizontal direction on the basis of the mold layout information.

10. A bending machine according to claim 9, wherein

the navigating member is formed on a front face of the lower table so

as to be movable in the horizontal direction, has a striking face to which an end face of the workpiece can strike from the left or right direction; and

the navigating member can be freely ascended in the direction of an upper face of a die after positioning in the horizontal direction.

5